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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,488	08/22/2003	William B. Butler	TRW(AP)6588	9427

7590 07/01/2005

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EXAMINER

ENGLISH, PETER C

ART UNIT	PAPER NUMBER
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3616

DATE MAILED: 07/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/646,488

Applicant(s)

BUTLER ET AL.

Examiner

Peter C. English

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 20030822.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to because:
In Fig. 3, the lower occurrence of “148” should be “146”. See Fig. 4.
2. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. Claims 3, 10, 11, 16 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 3, at lines 3-4, “a radially extending fill passage” is indefinite because it is unclear how this fill passage relates to the fill passage recited in claim 1, at line 8.

In claim 10, at line 2, “the fill valve assembly” lacks proper antecedent basis. The examiner suggests: at line 2, delete “assembly”.

In claim 16, at lines 3-4, “a radially extending fill passage” is indefinite because it is unclear how this fill passage relates to the fill passage recited in claim 13, at line 11.

In claim 17, at line 2, “the fill valve assembly” lacks proper antecedent basis. The examiner suggests: at line 2, delete “assembly”.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 4, 10-13 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamori et al. (WO 98/49034). Note that US 6,607,213 is an English language equivalent of WO 98/49034. As shown in Fig. 1, Yamamori et al. discloses an inflator comprising: a housing 1 defining a chamber 5 containing a combustible gas mixture 19 (see column 5, lines 7-9); a burst disk 12 closing a first passage 11 in the housing 1; a fill valve 2 extending through a second passage in the housing 1; and an igniter 3 for igniting the combustible gas mixture 19 and causing the burst disk 12 to open. The fill valve 2 includes a housing 2c, a movable valve member 2d and a plug 2e. As shown in Fig. 1, the outer portion of the housing 2c forms the widest part of the housing. In the embodiment of Fig. 3, the igniter 3 includes an isolation disk 40. Note also the embodiments of Figs. 5-7.

6. Claims 1 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Schotthoefer et al. (US 3,895,821). Schotthoefer et al. discloses an inflator comprising: a housing 12 defining a chamber containing pressurized gas 14; a burst disk 26 closing a first passage 50 in the housing 12; a fill valve 36 extending through a second passage in the housing 12; and an igniter 20 for causing the burst disk 26 to open. The fill valve 36 includes a housing (see Fig. 1) and a movable ball valve 40.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 2-5 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schotthoefer et al. (US 3,895,821) in view of Al-Amin et al. (US 5,897,137). Schotthoefer et al. lacks a combustible gas mixture and a plug sealing the fill passage. Al-Amin et al. teaches an inflator containing a combustible gas mixture (see column 2, lines 54-63) and having a fill valve with a plug 70 sealing a fill passage 38. From this teaching of Al-Amin et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Schotthoefer et al. by using a combustible gas mixture in order to increase the output of the inflator or reduce the required size of the inflator. Further, it would have been obvious to modify Schotthoefer et al. by providing the fill valve with a plug sealing the fill passage in order to prevent gas from leaking through the fill valve.

With respect to claims 3 and 16, Schotthoefer et al. teaches that the fill valve 36 can be located in different positions on the inflator housing 12 (see column 3, lines 46-47). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Schotthoefer et al. by positioning the fill valve on the side wall of the inflator housing, such that the fill valve housing extends radially into the inflator housing, in order to reduce the axial length of the inflator (for vehicles having minimal axial space for the inflator). Further, such a modification involving a mere change in location is generally recognized as being within the level of ordinary skill in the art.

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10. Claims 1-3, 6-8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erike (US 6,173,495) in view of Schotthoefer et al. (US 3,895,821). Erike discloses an inflator comprising: a side wall 24 containing a combustible gas mixture (see column 2, line 63 to column 3, line 5); an igniter end cap 22 supporting an igniter 36; and a diffuser end cap 38 supporting a burst disk 46 closing a first passage 31. Erike lacks a fill valve extending through a second passage in the inflator and having a movable valve member mounted in a valve housing. Schotthoefer et al. teaches an inflator comprising a fill valve 36 extending through a passage in an inflator housing 12. The fill valve 36 includes a valve housing (see Fig. 1) and a movable ball valve 40. From this teaching of Schotthoefer et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Erike by providing a fill valve extending through a second passage in the inflator in order to provide a reliable and efficient means of filling the inflator.

With respect to claims 3, 7 and 8, Schotthoefer et al. teaches that the fill valve 36 can be located in different positions on the inflator housing 12 (see column 3, lines 46-47). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Erike by positioning the fill valve on the side wall of the inflator housing or on the diffuser end cap, such that the fill valve housing extends radially into the inflator housing, in order to reduce the axial length of the inflator (for vehicles having minimal axial space for the inflator). Further, such a modification involving a mere change in location is generally recognized as being within the level of ordinary skill in the art.

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Erike in view of Schotthoefer et al. as applied to claim 6 above, and further in view of Headley et al. (US 5,683,107). The Erike and Schotthoefer et al. combination lacks an isolation disk closing a passage in the igniter end cap. Headley et al. teaches an isolation disk 164 closing a passage in the igniter end cap 82. See Fig. 3. From this teaching of Headley et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Erike by providing an isolation disk closing a passage in the igniter end cap in order to protect the igniter from the pressurized, combustible gas mixture.

12. Claim 17 is rejected under 35 U.S.C. 103(a) as being obvious over Yamamori et al. (WO 98/49034) in view of Hamilton et al. (US 5,078,422). Yamamori et al. lacks a plug including a portion located in the fill passage. Hamilton et al. teaches a plug 144 including a portion (see Fig. 1) located in a fill passage 140. From this teaching of Hamilton et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yamamori et al. by replacing the plug with a plug having a portion located in the fill passage in order to more surely seal the fill passage and also to facilitate attachment of the plug.

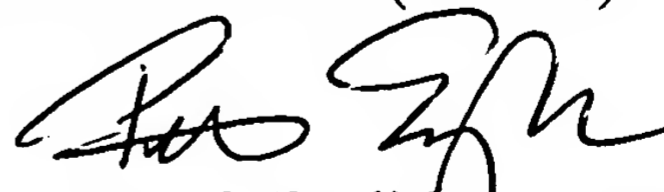
Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Stephenson and Hay teach inflators with fill valves. Buchanan et al. teaches a diffuser cap with a radial fill passage. Riley teaches a fill valve.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter C. English whose telephone number is 571-272-6671. The examiner can normally be reached on Monday through Thursday (7:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul N. Dickson can be reached on 571-272-6669. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Peter C. English
Primary Examiner
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6/27/05